February 14, 1850.

Sir RODERICK I. MURCHISON, Vice-President, in the Chair.

The following papers were read:—

1. "Supplementary Observations on the Structure of the Belemnite and Belemnoteuthis." By Gideon Algernon Mantell, Esq., LL.D., F.R.S., Vice-President of the Geological Society, &c.

In this communication the author describes his recent investigations on the structure of the two genera of fossil Cephalopoda, whose remains occur so abundantly in the Oxford clay of Wiltshire, namely, the Belemnite and Belemnoteuthis, as supplementary to his memoir on the same subject, published in the Phil. Trans. 1848. In that paper evidence was adduced to show the correctness of the opinion of the late Mr. Channing Pierce as to the generic distinction of these two extinct forms of Cephalopoda.

As however several eminent naturalists had expressed doubts as to some of the opinions advanced by the author in his former memoir, figures and descriptions are given in the present notice, of beautiful and instructive specimens lately discovered in Wiltshire, and which he conceives establish his previous conclusions. Dr. Mantell then states as the result of his examination of several hundred examples, that our knowledge of the organization of the animal of the Belemnite is at present limited to the following parts, viz.—

1. An external *Capsule* or *periostracum* which invested the osselet or sepiostaire, and extending upwards, constituted the external sheath of the receptacle.

2. The *Osselet*, characterized by its fibrous radiated structure, terminating distally in a solid rostrum or guard, having an alveolus, or conical hollow, to receive the apical portion of the chambered phragmocone; and expanding proximally into a thin cup, which became confluent with the capsule, and formed the receptacle for the viscera.

3. The *Phragmocone*, or chambered, siphunculated, internal shell; the apex of which occupied the alveolus of the guard, and the upper part constituted a capacious chamber, from the basilar margin of which proceeded two long, flat, testaceous processes.

These structures comprise all that are at present known of the animal to which the fossil commonly called "*The Belemnite*," belonged.

Of the *Belemnoteuthis*, the fossil cephalopod which Prof. Owen regards as identical with the Belemnite, many examples of the body with eight uncinated arms, and a pair of long tentacula, having an ink-bag and pallial fins, have been discovered. The osselet of this animal, like that of the Belemnite, has a fibro-radiated structure, investing a conical chambered shell; but this organ, for reasons fully detailed in the memoir, the author considers could never have been contained within the alveolus of a Belemnite; the soft parts of the animal of the Belemnite are therefore wholly unknown.

Many beautiful specimens of Belemnites and Belemnoteuthis were

exhibited by Dr. Mantell to the Society, in proof of the statements contained in the memoir.

2. "On the PELOROSAURUS; an undescribed gigantic terrestrial reptile, whose remains are associated with those of the Iguanodon and other Saurians, in the Strata of Tilgate Forest." By Gideon Algernon Mantell, Esq., LL.D., F.R.S., Vice-President of the Geological Society, &c.

The author had for a long while entertained the idea, that among the remains of colossal reptiles obtained from the Wealden strata, there were indications of several genera of terrestrial saurians, besides those established by himself and other geologists. The recent discovery of an enormous arm-bone, or humerus, of an undescribed reptile of the crocodilian type, in a quarry of Tilgate Forest in Sussex, where Dr. Mantell had many years since collected numerous teeth and bones of the Iguanodon, Hylæosaurus, &c., and some remarkable vertebræ not referable to known genera, induced him to embody in the present communication the facts which his late researches have brought to light

The humerus above-mentioned was found imbedded in sandstone, by Mr. Peter Fuller of Lewes, at about 20 feet below the surface; it presents the usual mineralized condition of the fossil bones from the arenaceous strata of the Wealden. It is four and a half feet in length, and the circumference of its distal extremity is 32 inches! It has a medullary cavity 3 inches in diameter, which at once separates it from the Cetiosaurus and other supposed marine saurians, while its form and proportions distinguish it from the humerus of the Iguanodon, Hylæosaurus, and Megalosaurus. It approaches most nearly to the Crocodilians, but possesses characters distinct from any known fossil genus. Its size is stupendous, far surpassing that of the corresponding bone even of the gigantic Iguanodon; and the name of *Pelorosaurus* (from πέλωρ *pelor*, monster) is therefore proposed for the genus, with the specific term *Conybeari*, in honour of the palæontological labours of the Dean of Llandaff.

No bones have been found in such contiguity with this humerus, as to render it certain that they belonged to the same gigantic reptile; but several very large caudal vertebræ of peculiar characters, collected from the same quarry, are probably referable to the Pelorosaurus; these, together with some distal caudals which belong to the same type, are figured and described by the author.

Certain femora and other bones from the oolite of Oxfordshire, in the collection of the Dean of Westminster, at Oxford, are mentioned as possessing characters more allied to those of the Pelorosaurus, or to some unknown terrestrial saurian, than to the Cetiosaurus, with which they have been confounded.

As to the magnitude of the animal to which the humerus belonged, Dr. Mantell, while disclaiming the idea of arriving at any certain conclusions from a single bone, states that in a Gavial 18 feet long, the humerus is 1 foot in length; *i. e.* one-eighteenth part of the length of the animal, from the end of the muzzle to the tip of